Su-57 / T-50 / I-21 / PAK FA

DATA FOR 2017 (standard update)
Su-57 / T-50 / I-21 / PAK FA
★★★★

The fifth-generation Advanced Frontline Aviation Complex (PAK FA) was developed within the framework of the I-21 program (program name) as the T-50 fighter (name of the experimental aircraft). Purpose - multifunctional multi-role fighter. The development of the aircraft was started by the P.O. Sukhoi Design Bureau in the late 1990s. In April-May 2001, a tender was announced under the I-21 / PAK FA program, in which the Sukhoi Design Bureau and the MiG Design Bureau took part, with the interaction of both design bureaus with the Yakovlev Design Bureau to develop a version of the project with vertical takeoff. The decision of the state commission based on the results of the competition was made in early 2002 - the T-50 aircraft project of the Sukhoi Design Bureau (chief designer - A. Davidenko) won as the least risky to implement and fully satisfying the tactical and technical requirements. In June 2002, the government approved the commission's decision, instructed it to prepare a target comprehensive program and begin preliminary design. The technical specifications were issued to the Russian Ministry of Defense in July 2002. The preliminary design of the T-50 was completed at the Design Bureau in November 2004 and approved by the Russian Ministry of Defense in December 2004. Experiments were started on laboratory aircraft. An electronic mock-up of the T-50 (probably a computer model of the aircraft's layout) was demonstrated to the Commander-in-Chief of the Russian Air Force V. Mikhailov no later than January 2005. By 2005, the names of the T-50 and I-21 were made public, and an announcement was made about the possible defense of the aircraft's technical design in 2006. By early 2006, the mock-up of the aircraft's airframe had undergone wind tunnel testing.

Production of structurally similar samples of the T-50-0 (T-50-KPO) was launched at KnAAPO (Komsomolsk-on-Amur) in November 2006. In April 2007, the Air Force leadership approved the T-50 mockup, and design documentation is being released. In August 2008, the development of the design documentation set was completed, and the drawings were transferred to KnAAPO for production of a pilot series of T-50. Assembly of a pilot batch of flight prototypes (T-50-KNS and T-50-1) began in December 2007 and continued in 2008. As of June 1, 2009, assembly of the T-50-0 intended for static tests was completed, and assembly of the flight test series aircraft (T-50-KNS and T-50-1) was underway. As of August 20, 2009, two or three technical prototypes of the T-50 (1-2 T-50-KPO and 1 T-50-KNS) have been created for ground testing and the first flight prototype T-50-1 is being assembled.

Tests: On December 24, 2009, at the Dzemgi airfield (Komsomolsk-on-Amur), one of the two prototypes of the first series of I-21, the T-50-KNS, made its first run. On January 16, 2010, the T-10M-10 flying laboratory, board No. 710, made its first high-speed taxiing run from 14:28 to 14:54 Moscow time at the Zhukovsky Flight Research Institute airfield with the T-50 engine prototype, "article 117", and on January 21, the T-10M-10 flying laboratory made its first flight with the "article 117" engine. On January 22, the T-50-1 made a run along the runway of the KnAAPO Dzemgi airfield with the front landing gear raised into the air and the brake parachute released. And finally, on January 29, 2010 at 11-19 local time, pilot Sergey Bogdan made the first flight on the T-50-1 lasting 47 minutes (*see below for a detailed chronology*). The second flight of the T-50-1 in Russian Air Force camouflage colors took place on February 12, 2010 in Komsomolsk-on-Amur. In addition to the first flight, it was originally planned to make 2-7 more flights in Komsomolsk-on-Amur (according to various sources), after which the first prototype should arrive at the Gordy airfield (the Air Force Flight Research Institute base in Zhukovsky).

Special thanks to the Stealth Machines website and personally to Paralay (http://paralay.com) for their enormous contribution to collecting and analyzing information on the PAK FA, as well as for the wonderful graphic materials.

T-50 / PAK FA aircraft No. 054 takes off, Ramenskoye, 22.08.2013 (photo - Sergey Koptsev, http://russianplanes.net/id117986).

Author: DIMMI Created: 24.08.2009 00:39:10 Comments: 2533 READ THE FULL ARTICLE

Orion / OCD Pacer

DATA FOR 2017 (in progress)
"Orion" / OKR "Inohodets"
★★★

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Long-endurance reconnaissance UAV / aerial reconnaissance complex. The UAV is being developed as part of the Inokhodets R&D project by Kronshtadt (formerly known as Transas and part of AFK Sistema). The contract for the Inokhodets R&D project was signed by the Russian Ministry of Defense with Transas in 2011.

In 2011-2012, the Myasishchev Engineering and Machine Building Plant planned to begin creating a flying laboratory based on the M-17RM aircraft to test the onboard control system of the Altius, Inokhodets, and Okhotnik-B advanced unmanned aerial systems (UAS) (source).

On July 17, 2017, it was reported that the Orion UAV would be presented in the closed section of the MAKS-2017 air show.

Tests . At the MAKS-2016 air show in August 2015, the management of the Kronstadt company announced the planned start of flight tests of the Orion UAV by the end of 2015 (source). The media reported on the start of the Orion UAV tests on May 13, 2016 (source). It is believed that the UAV tests in 2016 were conducted at the Gromov Flight Research Institute airfield in Ramenskoye.

Full-size model of the Orion UAV, MAKS-2017, Ramenskoye, 18.07.2017 (photo - Evgeny Erokhin, https://missiles2go.ru).

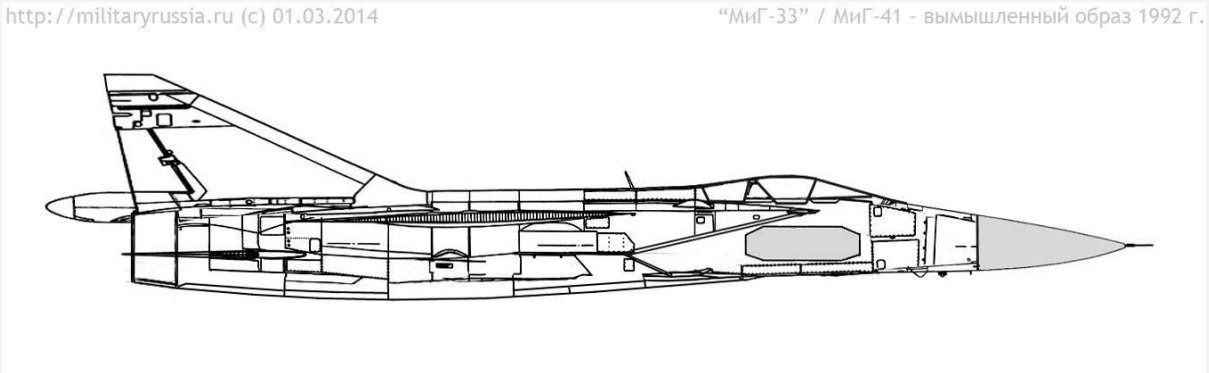
Author: DIMMI Created: 19.07.2017 23:00:52 Comments: 8 READ THE FULL ARTICLE

MiG-41 / PAK DP

DATA AS OF 2017 (standard replenishment)
MiG-41 / PAK DP
★★

Long-range high-speed fighter-interceptor (project) / promising long-range interception aviation complex (PAK DP). The fighter based on the MiG-31 is being developed by the MiG Design Bureau jointly with the Sokol Aircraft Plant Design Bureau (Nizhny Novgorod). The development began in the first half of 2013, according to a statement by the Air Force Commander-in-Chief on 11.04.2013 (source). According to later information, the aircraft's development began by order of the Chief of the General Staff of the Russian Armed Forces (source). Probably, a similar modernization of the MiG-31 was worked out back in the early 1990s, but was not implemented. The aircraft is planned to be developed within the framework of the armament program until 2020. As of 2013, the replacement of the MiG-31 aircraft fleet with the new machine is planned until 2028.

On August 11, 2014, the Commander-in-Chief of the Russian Air Force Viktor Bondarev clarified in the media that R&D is currently underway, R&D is planned to begin in 2017 to create a promising long-range interception aviation complex, and the new aircraft is expected to be delivered to the Air Force by 2025 (source). On June 14, 2017, MiG General Director Ilya Tarasenko stated in the media that the design bureau is working on the PAK DA project "partly on its own initiative", and work is underway on the concept of the project and its appearance (source).



A fictional image of a deep modernization of the MiG-31 - the "MiG-33" aircraft - a probable prototype of the MiG-41 project. The image is complex based on the stories of MiG-31 pilots and may have nothing in common with reality, 1992 (http://militaryrussia.ru).

Author: DIMMI Created: 01.03.2014 01:04:34 Comments: 33 READ THE FULL ARTICLE

Il-112

DATA FOR 2017 (standard update)
Il-112 / Il-112V / Il-112T
★★★

Military transport aircraft / light transport aircraft. The project development was started by the Ilyushin Design Bureau in the first half of the 1990s (probably in 1993). The aircraft is intended to replace the mass-produced An-26 transport aircraft. The first version of the project envisaged the creation of a passenger version of the aircraft. To create the Il-112, JSC Il-Bashkiria was created and the program was to be financed with proceeds from the sale of Bashkir oil. Serial production of the aircraft was planned to be organized at the Kumertau APO from 1994 (with its partial re-profiling by reducing the capacity involved in

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the production of Kamov helicopters). These plans were not realized.

Second life. In January 2000, the design of the Il-112 began. Completion of the design was expected during 2000, but funding was not organized and the work was suspended. In December 2004, the aircraft model and draft design were presented to the Russian Ministry of Defense. The aircraft was developed using the Ilyushin Design Bureau's own funds, and the project was then included in the state defense procurement plan and the arms procurement program until 2015. However, in August 2010, the aircraft's customer, the Russian Ministry of Defense, suspended funding and suggested that the developers (Ilyushin Aircraft Corporation) find extra-budgetary funds to create four prototypes of the Il-112. In May 2011, the Russian Ministry of Defense decided to abandon the military transport version of the Il-112 and purchase seven An-140 cargo aircraft. On July 20, 2011, assembly of the first prototype of the Il-112V military transport aircraft at VASO was stopped.

Third Life. In 2013, the Russian Ministry of Defense changed its mind and on 20.12.2013 it was announced that a contract would be signed with UAC in 2014 to develop the Il-112V. The contract amount is 7.9 billion rubles. Plans were announced to purchase 62 aircraft and the first deliveries are scheduled for 2017. On 14 May 2015, Interfax reported that a decision had been made to reduce the first order for the military transport Il-112V. Later in 2015, information appeared about an order for 35 aircraft (source). The contract was expected to be signed in the second quarter of 2015. Deliveries are planned to begin in late 2018 - early 2019 (adjusted to 2019, source).

Model of the Il-112V at the MAKS-2009 exhibition, 21.08.2009 (photo - Allocer, http://commons.wikimedia.org).

Author: DIMMI Created: 10.01.2013 14:38:15 Comments: 6 READ THE FULL ARTICLE

A-60/78T6/1LK222

DATA FOR 2016 (standard update)
A-60 / 1A / LL1A / OKR complex "Drift" 78T6
A-60 / 1A2 / LL1A2 / OKR complex "Sokol-Eshelon" 1LK222
★★★★

Flying laboratory / special aviation complex with a laser experimental installation / air-based laser complex (ABLC). The project for the complex was developed by the Beriev Aircraft Company together with the Almaz Central Design Bureau (later the Almaz-Antey Air Defense Concern); the chief designer of the complex was academician B.V. Bunkin. The development of the flying laboratory aircraft was started at the Beriev Design Bureau in 1977. The chief designer of the 1A2 flying laboratory aircraft based on the Il-76MD is N.A. Stepanov, deputy chief designer is V.D. Zaremba, leading designer is Yu.A. Bondarev. The chief designer of the Sokol-Eshelon complex of the Almaz Research and Production Association is Vladimir Karachunsky (2015, *hist. - "Sokol" spreads its wings*).

In June 1965, a meeting of academicians A.M. Prokhorov, M.D. Millionshchikov and A.A. Raspletin took place, as a result of which NPO Almaz joined the work on laser topics in the interests of air defense and missile defense. In August 1973, a special design bureau for the development of laser systems was created at NPO Almaz on the basis of an existing division (source). In mid-1972, probably after ground tests of a prototype gas laser, a proposal was made to place a laser installation on an aircraft carrier. The development of the complex was entrusted to NPO Almaz, the power source was developed by the Dzerzhinets plant. Flight tests of the flying laboratory were planned for 1979-1980, and of the complex - for 1981 (source).

The development of the air-based laser complex for combating automatic drifting balloons 78T6 "Dreyf" was started in 1975 according to the tactical and technical assignment agreed with the Air Force in terms of the complex as a whole and with the Air Defense Forces in terms of the onboard laser complex. In 1978, N.A. Mansurov was appointed head of the thematic department of the Almaz Central Design Bureau for the development of the "Dreyf" complex. At the Branch of the I.V. Kurchatov Institute of Atomic Energy, with the participation of L.N. Zakharyev, N.N. Polyashev, G.M. Zuev, V.A. Feofilaktov, V.V. Morozov and others from the Almaz Central Design Bureau, the development of a bench model of a full-scale laser was successfully completed. N.A. Mansurov and N.V. Tsyganenko supervised the development of design documentation and the manufacture of the onboard complex equipment. The TANTK named after G.M. Beriev and the Kazan Engine-Building Plant "Soyuz" also took part in the work, where, together with V.D. Zaremba, Yu.A. Bondarev, V.A. Bogdanov, N.A. Stepanov, I. Fakhrutdinov, Yu. Belyakov and others, production issues were resolved. At the same time, the test base was being prepared. The test engineers of the test site Dashkov Yu.A., I.P. Zhigan, I.I. Kristapovich, Yu.G. Maistruk, Yu.M. Pisanenko, N.I. Telepanov and others took part in the development of the testing methodology for the aviation complex. Particular attention was paid to the training of future operators of the onboard laser complex "Dreyf". For this purpose, four of the best specialists in edge electronics were selected from among the graduates of the Minsk Higher Engineering Anti-Aircraft Missile School and sent to the test site to gain experience in testing laser equipment. During this internship, they underwent the necessary flight training, including parachute training (source).

The lead developer of the megawatt-class laser installation was NPO Astrofizika - tests of the prototype of the installation, intended for placement on the Skif space station, were conducted on the 1A laboratory aircraft. The 1 MW laser itself was created at the branch of the Kurchatov Institute in Krasnaya Pakhra (source).

The first prototype of the A-60 / 1A laboratory aircraft made its maiden flight on August 19, 1981 (crew of E.A. Lakhmostov). In 1983, the installation of the laser complex on the aircraft was completed and its tests began. According to Western data, tests of the complex began in 1984. On September 22, 1982, an air target was hit with the help of a similar ground-based complex. On April 27, 1984, an aerial target was hit for the first time using the LKAB, crew commander - E.A. Lakhmostov, LKAB operator - V.V. Karachunsky (*source - Target in orbit*). It is known that several dozen flights were carried out using the laser installation at a target - a stratospheric balloon located at an altitude of 30-40 km. Shooting at a La-17 target was also carried out. Some sources indicate thatthat the complex with the A-60 aircraft was created as an aviation complex under the Terra-3 program" (source). In 1989, the 1A aircraft burned down at the Chkalovsky airbase (see below).

The second A-60 / 1A2 aircraft was equipped with a modernized laser system. The aircraft made its first flight on August 29, 1991 (crew of V.P. Demyanovsky). In 1993, work on the aircraft and the laser system was stopped. In 2009, testing of the 1A2 aircraft was resumed.

In some sources, the first A-60 aircraft is mistakenly called "1A1" by analogy with the 1A2 aircraft. In fact, the 1A2 aircraft was most likely created using units and elements of the 1A aircraft airframe and therefore was called 1A2 - "the second 1A" while retaining both the factory and tail numbers of the 1A aircraft. Presumably, this was done because the task for work on the aircraft was drawn up as "restoration" of the first LL after the fire, that is, there was not a creation, but a "recreation", although in essence it turned out to be almost a new plane.

Aviation historian Alexey Koval provided great assistance in preparing the material.

A-60/1A2 at the Beriev Aircraft Company airfield, Taganrog, autumn-winter 2010 (http://russianplanes.net).

Author: DIMMI Created: 03.07.2012 22:35:58 Comments: 24 READ THE FULL ARTICLE

R&D Altius-M / Altair

DATA FOR 2016 (standard update)
R&D "Altius" / "Altius-M"
"Altair"
★★★

Experimental reconnaissance UAV with long flight duration. The development of the Altius-M R&D project - "Research on the justification of the appearance and development... of the UAV..." - is being conducted by the Sokol Design Bureau (Kazan) together with the Transas company (St. Petersburg), the chief designer is Alexander Vladislavovich Gomzin. In early October 2011, the developers' preliminary design won the competition of the Russian Ministry of Defense for the creation of a UAV with a takeoff weight of up to 5 tons (the second participant in the competition was the Russian Aircraft Corporation (RAC) MiG). The contract for the Altius-M R&D project is 1 billion rubles. The result is the development and construction of a prototype demonstrator of the UAV. It was reported that testing of the flight model should begin in 2014-2015. As of 25.03.2014, the assembly of the UAV prototype with the name "Altair" and tail number 001 is underway in the KAPO-Composites slipway shop. Probably, the UAV tests began at the KAPO airfield (Kazan) in August 2014. Information about the tests of the Altair UAV appeared in the media on August 13, 2016 - it was reported that the device made its first flight in July 2016.

In 2011-2012, the Myasishchev Engineering and Machine Building Plant planned to begin creating a flying laboratory on the basis of the M-17RM aircraft for testing the onboard control system of the promising unmanned aerial systems (UAS) "Altius", "Inohodets", "Okhotnik-B" (source).

On February 5, 2013, during a visit to the Gorbunov Aviation Production Association (Kazan), Russian Defense Minister S.K. Shoigu publicly demonstrated a model of the UAV developed based on the Altius-M research and development work.

Model of the NIR Altius-M UAV from the design of the exposition at the MAKS-2013 air show, August 2013 (http://militaryphotos.ru).

Author: DIMMI Created: 09.02.2013 20:43:32 Comments: 61 READ THE FULL ARTICLE

X-66 / X-23 - AS-7 KERRY

DATA AS OF 1997 (requires updating)
X-66 product 66 "Thunder" - AS-7 KERRY
X-23 product 68
X-23M product 69
X-23L
★★★

Tactical air-to-ground guided missile. Developed and manufactured by the Design Bureau of Plant No. 455 (now JSC KTRV, formerly GNPO Zvezda-Strela, Korolev, Moscow Region). Chief Designer Yu. N. Korolev. The result of placing a state defense order for the development of the Kh-66 missile at Plant No. 455 was the issuance of Order No. 100 of the USSR Ministry of Aviation Industry on March 12, 1966, on the establishment of an experimental design bureau at the enterprise.

In the early 1960s, after arming the MiG-21PFM aircraft with RS-2US missiles, experimental firings of the missiles at ground targets were conducted. In 1963, based on the test results, an act was signed which concluded that it was possible to use RS-2US missiles against ground targets, indicating that such use was inappropriate. In 1965, a decision was made to develop a tactical air-to-ground missile using the RS-2US missile power plant (*ist. - Not an anniversary*). On February 21, 1966, by order No. 36, a complex group was formed at Plant No. 455 to develop the Kh-66 missile. Yuri Nikolaevich Korolev was appointed chief designer of the development (*ist. - They were the first*).

Work on forming the appearance of the tactical missile was carried out by the design bureau of Plant No. 455 MAP on its own initiative. The conducted studies showed that with a warhead weight of 100 kg, ensuring the destruction of most small-sized ground and surface targets, the mass of the missile would be 270 kg. This value was comparable to the mass of the R-8M missile, serially produced by Plant No. 455, so the propulsion system was borrowed from it. The guidance equipment was taken from the RS-2US missile along with its last section. The receiving antenna of the equipment was located in the tail section of the missile, and the design bureau of Plant No. 81 MAP (now JSC "Iskra" Design Bureau named after I. I. Kartukov) was required to develop a two-nozzle apparatus for the engine. Preliminary development of this design at the KMZ Design Bureau was performed by V. V. Marchenko. The linear acceleration sensors, ampoule electric battery and cylinders for the pneumatic unit were the same as on the RS-2US missile. The control units of the RS-2US missile were modernized in order to increase their power (*source - Not an anniversary*).

The Kh-66 missile was accepted into service by Order of the USSR Minister of Defense No. 0075 dated June 20, 1968. The Kh-23 missile was already in service by 1975, the Kh-23M - until 1988. They are used with the APU-68 (for example, on the Yak-38).

Missile of the Kh-23/Kh-23M family - AS-7 KERRY for the Su-17M3 of the USSR Air Force (Flieger Kalender 1985. 1984, GDR).

Author: DIMMI Created: 19.02.2009 00:19:04 Comments: 1 READ THE FULL ARTICLE

K-55 / R-55 - AA-1C ALKALI

DATA AS OF 2012 (standard replenishment)
Missile K-55 / R-55 / "product 67" - AA-1C ALKALI
Rocket K-55M / R-55M
★★★

A short-range air-to-air guided missile. Development of a variant of the K-51 missile with the thermal homing head of the K-13 missile was started in 1958 by the Design Bureau of Plant No. 455 (now GNPC Zvezda-Strela / JSC KTRV), Chief Designer - Nikolai Titovich Pikot. Project and prototype name - CM-6. Design documentation for the K-55 missile was released in 1960, bench testing of the control circuit and ground tests of the new warhead developed by GSKB-47 were carried out. During this period, the working name of the missile - "R-6" is mentioned - it is no longer encountered. Development of the K-55 missile was carried out in competition with the OKB-4 K-8M-8 project - the implementation of technical solutions of the K-8 missile in a missile of smaller dimensions. The K-55 missile was preferable from the point of view of organizing mass production.

The first prototypes were manufactured and tested in 1961, starting from February 4 and through March 25 - 6 launches of "program" TsM-6P missiles (missiles for autonomous testing without a seeker) and 1 launch of a telemetry missile with an IGS-59 seeker from altitudes of 10-15 km from a T-43-3 carrier were conducted. As of 1961, the K-55TG telemetry missiles (testing the IR seeker), K-55SV (testing the Lastochka fuse) and the K-55TS combat missile with an optical fuse were being produced. In 1962, 9 launches were conducted at luminous aerial bombs and targets descending on parachutes, as a result of which the seeker was refined. Routine maintenance was also carried out on the carriers used in missile testing - T-43-5 and T-43-12. In 1963, factory tests of missiles were continued on the T-43-12 and successfully completed in May 1964 - in the qualifying stage of tests, the T-43-12 shot down Il-28 and MiG-15 target aircraft.

Taking into account the results of the factory tests, the Military-Industrial Complex under the USSR Council of Ministers, by decision No. 228 of September 9, 1964, scheduled joint tests of the modernized weapons system of the Su-9 aircraft with K-51 / RS-2US and K-55 missiles for the 2nd quarter of 1965. The USSR Ministry of Defense was ordered to provide two Su-9 aircraft for the tests, and Plant No. 455 produced 35 K-55 missiles by the end of 1964. In 1965, during tests, 6 combat and 5 telemetry missiles were launched, four unmanned MiG-15s were shot down, and in 1966, 2 combat and 5 telemetry missiles were launched. As a result, it was possible to increase the sensitivity of the S-59 seeker.

Serial production of the missiles was launched by Plant No. 455 under the index "Product 67" in 1967, but due to shortages of the S-59 seeker in 1967, the plant fulfilled only half of the plan. In 1968, the plant reached the planned production targets for the modified missile (an impact fuse was introduced into the I-116 safety-actuating mechanism, the automation unit was improved, and the body of the second compartment was strengthened). The missile was also produced by the Moscow Kommunar Plant. The K-55 missile was officially accepted into service on the Su-9 aircraft under the designation R-55 on January 21, 1969. In terms of maneuverability, the R-55 missile was significantly superior to the K-13A missile, but was supposed to be inferior to the K-13M and K-60 missiles that were being developed.

Combat missile R-55 (http://www.airwar.ru , processed).

Author: DIMMI Created: 21.01.2009 23:34:44 Comments: 1 READ THE FULL ARTICLE

K-5M / RS-2U / RS-2US - AA-1A/B ALKALI

DATA AS OF 2016 (standard replenishment)
Missile K-5M / RS-2U / "product I" / "product 1" - AA-1A / AA-1mod2 ALKALI
Missile K-5MS / K-51 / RS-2US / "product IS" / "product 4" - AA-1B / AA-1mod3 ALKALI
AA-1mod4-6 (?)
★★★★

A short-range air-to-air guided missile. Developed by OKB-2 (later MKB Fakel, general designer P.D. Grushin) based on the RS-1U missile ("product SHM"). During 1954, a search was underway for ways to modernize the RS-1U missile. The preliminary design of the K-5M / RS-2U missile, released in March 1955, implemented an increase in the wing area and engine fuel charge, and provided for the use of a more powerful warhead. The missile uses a new type of radio fuse.

Testing of the RS-2U missile began in the spring of 1956 in Vladimirovka. Autonomous missile launches (without a guidance system) were carried out from the MiG-19/SM-2M carrier aircraft (factory No. 59210108) with two APU-4 launchers and no radar. Later, two MiG-19PM/SM-7M aircraft equipped with RP-2U radars and four APU-4s joined the tests. The aircraft were converted into carriers at the Gorky Aircraft Plant No. 21. During test launches from altitudes of about 10 km, the phenomenon of MiG-19 engines stopping due to the exhaust gases of the launching missile was discovered.

In October 1957, tests of the future main carrier of the RS-2U missiles - the MiG-19PM/SM-7/2M - were conducted. In 1957, Aircraft Plant No. 21 in Gorky produced 7 SM-7/2M ("type 65") aircraft with RP-2U radars. Later, mass production of this modification of the MiG-19 began. Testing of the RS-2U missiles on the MiG-19PM / SM-7/2M began on October 14, 1957 and continued until October 24. As a result of the tests, a decision was made to adopt the system with K-5M / RS-2U missiles and begin their serial production. Also in July-August 1957, factory flight tests of the KS system, which regulates engine

operation and prevents it from stopping when launching missiles, were conducted on MiG-19s with factory numbers 59210406 and 59210103.

By the Resolution of the Council of Ministers of the USSR No. 134-54 of November 28, 1957, the S-2U system with RS-2U missiles was accepted into service. Serial production of the MiG-19PM ("product 65") began at Aircraft Plant No. 21 in Gorky. A total of 369 aircraft were produced from 1956 to 1960.

K-5M/RS-2U missiles under the MiG-19PM fighter, side No. 18 red (source).

Author: DIMMI Created: 15.01.2009 23:07:46 Comments: 4 READ THE FULL ARTICLE

K-33 / R-33 - AA-9 AMOS

DATA FOR 2016 (standard update)
K-33 / R-33 / "product 410" missile - AA-9 AMOS
K-33S / R-33S missile
R-33E missile
★★★★

Long-range air-to-air missile. Preliminary studies of the interception system project with the Tu-148 interceptor with the Zaslon radar (target detection range - 110-115 km, missile launch range - 80-90 km) were conducted until the spring of 1968. After the death of the Air Defense Commander-in-Chief A. Kadomtsev in the spring of 1968, the Air Defense leadership opted for the interception system project with the E-155MP aircraft. The USSR Council of Ministers Resolution of May 24, 1968 provided for the development of a modernized MiG-25 - the E-155MP interceptor . The interception system included the Zaslon radar and missiles with a launch range of 120 km.

The development of the K-33 missiles was entrusted to the Vympel State Design Bureau under the supervision of Deputy Chief Designer of the Design Bureau V.V. Zhuravlev and Lead Designer, and later Deputy Chief Designer of the Design Bureau and Head of Long-Range Missile Development in 1977-2007 Yu.K. Zakharov. The K-33's competing project was the K-50 missile project of the M.R. Bisnovat Design Bureau . It was planned to develop five missile variants - with a radar homing head, with a thermal homing head, with a combined radar-thermal homing head, with an active radar homing head, and a missile variant with replaceable warheads. Sketch designs were prepared for each missile variant (*source - Yu. Zakharov*).

Models of the first two configurations of the K-33 missile were manufactured as early as 1968 - initially the missile had a "duck" aerodynamic configuration and was supposed to be suspended under the wing like the R-40 missiles . Later, both the aerodynamic design and the suspension method were changed. The preliminary design of the K-33 missile in its current form was released in 1970. In 1972, the second edition of the preliminary design was released - with a multifunctional MFBU-410 seeker, a thickened body with large-chord, small-span wings, with the missiles placed in a semi-recessed position under the aircraft fuselage.

The Decree of the USSR Council of Ministers of May 12, 1974 tasked with developing an interception system with an E-155MP interceptor aircraft and a K-33 missile with a quasi-continuous semi-active radar seeker and a single high-explosive fragmentation warhead (*source - Yu. Zakharov*).

To test the components of the interceptor system, aircraft laboratories were created - for testing the K-33 missile homing head - LL-21 based on the MiG-21 (plant No. 76211524), for testing the Zaslon radar and missiles - the LL-2 / LL-104-518 aircraft laboratory based on the Tu-104 (plant No. 42324). The conversion of the Tu-104 was carried out by the Vzlet Scientific and Technical Complex starting in 1970. Starting in 1972, the Tu-104 was used to test the Zaslon radar and the MFBU-410 homing head, installed in full-size mock-ups of the GVM-410 missiles. For testing during 1972, 8 launch prototypes of missiles (for unguided launches), 1 throwing missile and 5 program missiles (without a homing head,but with autopilot).

R-33 missile of the MiG-31DZ aircraft. Photo taken during a surprise inspection of the Air Force's combat readiness at the Pemboy training ground near Vorkuta, May 2013 (photo - Alexey Reznicenko, http://lelik1970.livejournal.com/).

Author: DIMMI Created: 25.01.2009 00:17:32 Comments: 3 READ THE FULL ARTICLE

Il-38 - MAY

DATA FOR 2016 (standard update)
Il-38 - MAY
★★★★

Anti-submarine and maritime patrol aircraft. In August 1957, when the Il-18 passenger airliner was just being created, the Commander-in-Chief of the USSR Navy S.G. Gorshkov proposed to create a long-range anti-submarine aircraft with K-18 anti-submarine cruise missiles on its basis. The aircraft was supposed to be used to destroy enemy boats at a distance of 500-1000 km from its coast. In the same 1957, the USSR Council of Ministers issued a Resolution on the development of such an aircraft based on the Il-18 airliner (Il-18PLO) or the An-12 transport aircraft. The draft tactical and technical requirements for the creation of an anti-submarine modification of the Il-18 aircraft was sent by the USSR Air Force to OKB-240 of the USSR State Aviation Committee of the USSR, General Designer S.V. Ilyushin in 1957. The aircraft was supposed to be equipped with a first-generation radio-hydroacoustic system "Baku", which at that time existed as a project. The revised technical specifications for the aircraft were sent to OKB-240 in 1958. By the Decree of the USSR Council of Ministers of December 11, 1959, No. 1335-594, SSKNII-131 of the USSR Ministry of Radio Industry was tasked with creating onboard equipment for the Berkut submarine search and detection radiohydroacoustic system. The creation of radiohydroacoustic buoys was assigned to NII-753 of the USSR Ministry of Shipbuilding Industry. The ideological foundations for using the Il-38 aircraft were jointly prepared by the Naval Academy and a number of Navy and Air Force institutes.

Il-38 of the Pacific Fleet Aviation in Kamchatka, December 2013 (http://pressa-tof.livejournal.com).

Author: DIMMI Created: 27.03.2011 22:33:01 Comments: 43 READ THE FULL ARTICLE

Su-35 / Su-35S - FLANKER-E

DATA AS OF 2015 (standard replenishment)
Su-27M / T-10M - Super FLANKER
Su-35 / T-10M - FLANKER-E
Su-35BM / "T-10BM" / Su-35 / Su-35S - FLANKER-E+
★★★★

Multirole fighter. Developed by the Sukhoi Design Bureau as a further development of the Su-27 FLANKER. Overall management of the aircraft development was exercised by the Design Bureau's General Designer M.P. Simonov , the Su-27M project was headed by the Chief Designer (and Su-27 project leader) A.I. Knyshev, and then by Nikolai Fedorovich Nikitin, later the Chief Designer. In 1996, after N.F. Nikitin transferred to work at the Sukhoi Air Defense and Industrial Complex, Vladimir Sergeevich Konokhov was appointed Chief Designer and Project Leader for the Su-27M and its modifications.

The development of the multi-role modification T-10M / Su-27M began in the early 1980s. In addition to optimization for highly maneuverable air combat, the aircraft also received the ability to destroy ground targets with guided missiles. Formally, the aircraft belongs to the 4++ generation of jet fighter aircraft, but according to some experts, it can be considered a 5th generation aircraft. The second-generation Su-35 aircraft in the early 2000s was called the Su-35BM ("Big Modernization") for some time, which was later discontinued. The name "T-10BM" is most likely not official.

Su-35S, board No. 07 red, in Ramenskoye, July 2013 (photo - Sergey Lysenko, http://russianplanes.net/id115658).

Author: DIMMI Created: 10.05.2011 00:09:53 Comments: 269 READ THE FULL ARTICLE

Il-106 / PAK TA

DATA FOR 2015 (standard update)
Il-106 / PAK TA (project)
★★

Prospective aviation complex of transport aviation / military transport aircraft. The project is being developed by the Ilyushin Design Bureau using the developments in the Il-106 transport aircraft project. In some sources and the media, the aircraft is called the "Il-106". R&D on the creation of the aircraft presumably began in 2013. Also on 08.07.2013, JSC "AC im.S.V.Ilyushin" announced a competition for the provision of a bank guarantee in the amount of 354.4 million rubles for the fulfillment of the JSC's obligations under the State Contract with the Ministry of Defense of Russia for the development of a technical design for a heavy long-range military transport aircraft and a mock-up of the crew cabin (source , source).

As of March 2014, the requirements for the aircraft have not yet been formed, but the first possible configuration options have already been obtained as a result of the first tests. In 2014, TsAGI and the Myasishchev Design Bureau were also working on the aircraft project together with the Ilyushin Design Bureau.

In November 2015, the general designer of the Ilyushin Aircraft Company Nikolai Talikov announced the completion of the aircraft design by 2022-2023 (source).


The supposed ancestor of the Il-90/PAK TA is the Il-106 aircraft at the preliminary design stage in 1987, photo - JSC "AK im.S.V.Ilyushin" (source).

Author: DIMMI Created: 17.05.2014 08:57:34 Comments: 4 READ THE FULL ARTICLE

Su-24 - FENCER

DATA AS OF 2015 (standard replenishment) Su-24 - FENCER-A, B , C Su-24M - FENCER- D Su-24MR - FENCER- E Su-24MP - FENCER- F Su-24M2 - FENCER-G Frontline bomber with variable geometry wing. Developed by the Sukhoi Design Bureau. The chief designer of the aircraft is E.S. Felsner, the leading designer of the project (1993) is L.A. Logvinov. Development of the T-6-2I prototype began in 1966. The first flight of the T-6-2I prototype was on January 17, 1970 (pilot - V.S. Ilyushin). The decision to launch series production was made in 1971, and in the same year, production of the aircraft began at the Chkalov Aircraft Plant in Novosibirsk. The Su-24 was also produced by the Komsomolsk-on-Amur Aviation Production Association. Completion of testing and first deliveries to the Air Force - 1973. Officially accepted into service on February 4, 1975. In 1983, production of the Su-24 ceased. Serial production of

the Su-24M and its modifications was carried out there in 1979-1993. In total, the industry produced about 1,400 Su-24 of various modifications over all these years. In 1974, the Chairman of the Joint Chiefs of Staff of the US Armed Forces, Admiral Thomas Moorer, announced the appearance of the Su-19 FENCER aircraft in the USSR.

★★★

Frontline bomber Su-24M2, side No. 22, white, 2009 (photo by Alexander Mishin, http://jetphotos.net).

Author: DIMMI Created: 30.08.2009 23:17:07 Comments: 37 READ THE FULL ARTICLE

Su-25 - FROGFOOT

DATA FOR 2015 (standard update)
Su-25 "Rook" - FROGFOOT / RAM-J
Su-25SM
★★★★

Attack aircraft. The development of the preliminary design for the aircraft for close support of troops over the battlefield SPB ("Aircraft of the Battlefield") was initiated by the instructor of the Yu. A. Gagarin Air Force Academy I. V. Savchenko and employees of the P. O. Sukhoi Design Bureau O. S. Samoylovich, D. N. Gorbachev, V. M. Lebedev, Yu. V. Ivashechkin and A. Monakhov in March 1968. In May 1968, the design of the aircraft began in the P. O. Sukhoi Design Bureau under the name T-8. The study of the aerodynamic design of the future attack aircraft began at TsAGI in 1968. The USSR Ministry of Defense, at the instigation of Defense Minister A.A. Grechko, announced a competition in March 1969 for a light attack aircraft design, in which the Sukhoi Design Bureau (T-8), Yakovlev (Yak-25LSh), Mikoyan and Gurevich (MiG-21LSh), and Ilyushin (Il-42) participated. The Air Force requirements were formulated for the competition (see TTX).

Su-25SM, red side no. 11, at the Kubinka airbase, 04.04.2012 (photo - Alexander Martynov, http://russianplanes.net).

Author: DIMMI Created: 11.02.2009 23:35:26 Comments: 77 READ THE FULL ARTICLE

Su-34 - FULLBACK / FLANKER-C2

DATA FOR 2015 (standard update)
Su-34 - FULLBACK / FLANKER-C2
★★★★

Multirole attack aircraft / frontline bomber. Created on the basis of the Su-27 Design Bureau named after P.O. Sukhoi, General Designer M.P. Simonov, Chief Designer - R.G. Martirosov. Development of the attack modification T-10V was started by the Resolution of the Council of Ministers of the USSR dated June 19, 1986. The development originates from the T-10Sh project (1980), and, up until 1986, the design was based on the T-10UB. Since 1986, the T-10V index was adopted for the project of an attack aircraft with a completely original layout. The preliminary design of the aircraft was protected in May 1988 - the project proposed two cockpit layout options - a traditional tandem and with the pilots located side by side. The second layout option was chosen for implementation. Technical design of the aircraft was carried out in 1987-1988.

The first prototype T-10V-1 was assembled by the experimental production of the Sukhoi Design Bureau (MMZ im.P.O.Sukhoi, Moscow) in 1989-1990 by combining a new armored cockpit, manufactured by the experimental production of the Sukhoi Design Bureau (according to other sources - NAPO im.Novosibirsk), with a modernized airframe of the serial Su-27UB. The first flight of the prototype Su-27IB (T-10V-1, side No. 42 "blue") took place on April 13, 1990 (pilot - A.A. Ivanov) at the airfield of the Flight Research Institute in Zhukovsky. In 1990-1991 the experimental prototype underwent flight design tests, later the aircraft was modified in terms of equipment and design. The T-10V-1 prototype was first publicly shown at an exhibition of military equipment for the top officials of the CIS countries in Machulishchi (Belarus) on February 13, 1992.

Su-34, board No. 10, red, 2013 (photo - Vadim, http://russianplanes.net/id110542).

Author: DIMMI Created: 16.01.2009 22:44:22 Comments: 216 READ THE FULL ARTICLE

Aircraft 485 (project)

DATA FOR 2015 (standard update)
Aircraft 485 (project)
★★★

Long-range and ultra-long-range bomber. The aircraft design was developed using the experience of developing the Tu-4 aircraft at OKB-156 (now OAO Tupolev). The index "485" means that this was the fifth aircraft design, the development of which began in 1948. The development plan for the USSR Air Force for 1947 formulated requirements for a long-range bomber - a replacement for the Tu-4 bomber. It envisaged the creation of two types of bombers - with piston engines and with turbojet engines. Both aircraft versions were to be made with sealed cabins, powerful defensive weapons and modern navigation and communication equipment. As a result, in 1947-1948. In the OKB-156 project team (headed by B.M. Kondorsky), several preliminary designs for long-range bombers were developed - aircraft 471, 473, 473, 485, 487 (future Tu-85) and 489.

The design for aircraft 485 was developed in the summer of 1948 in two versions - with 4 engines (long-range version) and with 6 engines (ultra-long-range). Work on the project was stopped in 1949. By default, the data for the six-engine version of aircraft 485 is given.

Model of aircraft 485. Model shop of JSC Tupolev, August 2013 (http://onepamop.livejournal.com).

Author: DIMMI Created: 12.11.2013 14:39:02 Comments: 8 READ THE FULL ARTICLE

BrahMos-II / BrahMos-II (project)

DATA AS OF 2015 (standard replenishment)
BrahMos-II / BrahMos-2 missile

★★★

Hypersonic missile project. The missile is being developed by NPO Mashinostroyenia (*source - Annual report, p. 15*) jointly with DRDO (India). On September 29, 2008, after a meeting of the Russian-Indian Commission on Military-Technical Cooperation, the head of the BrahMos joint venture, Dr. Shivathanu Pillai, said that a decision had been made at the meeting to jointly develop the BrahMos-II hypersonic missile with a flight speed of 5-7M. The missile was planned to be created within 5 years (in 2013). In 2009, DRDO planned to test the HSTDV hypersonic demonstrator vehicle, which was being developed jointly with IAI (Israel), TsAGI and TsIAM. The purpose of the tests was to test the combustion chamber of the hypersonic ramjet.

There is an assumption that the joint development is based on a system created primarily for the Russian Armed Forces at NPO Mashinostroyenia - a missile system with the Zircon anti-ship missile . The first statements about the development of the system in the media date back to 2010-2011. As of early 2013, it is believed that the identification of the BrahMos-II system as an analogue of the Zircon anti-ship missile is either a hoax or simply a mistake. As of 2011, the organization of serial production of the Zircon missile system (and possibly Brahmos-II) is planned for the coming years at PO Strela (Orenburg, *source - Annual report, p. 15*).

Before the opening of the Aero India 2013 aviation exhibition on February 5, 2013, a photo of the BrahMos-II missile model appeared for the first time. Later, on the opening day of the exhibition on February 6, more detailed photos of the missile model appeared.

The data are presumptive. Sources are given.

Model of the BrahMos-II missile at the DefExpo-2014 exhibition, 05.02.2014 (http://www.brahmand.com/).

Author: DIMMI Created: 23.07.2012 17:20:49 Comments: 22 READ THE FULL ARTICLE

An-178

DATA AS OF 2015 (standard replenishment)
An-178

★★★

Short-range military transport aircraft. The aircraft is being developed by Antonov State Enterprise (Kiev, Ukraine, General Designer - Dmitry Semenovich Kiva) based on the An-158 passenger aircraft. Development began in 2010 (the order to begin development was signed on February 5, 2010, officially announced by the Antonov State Enterprise press service on February 23, 2010). The aircraft is planned to replace the An-12 type military transport aircraft - according to forecasts by Antonov specialists, the potential market for the aircraft may be about 800 units within 10-12 years. The maximum production capacity of Antonov State Enterprise is estimated at 12 aircraft per year (source). In 2010, it was planned to expand the assembly of An-178 aircraft, including in Russia (53% share in the project), but the decision on the participation of the United Aviation Corporation (UAC) in the project was never made. On November 29, 2010, it was reported that a preliminary design for the aircraft had been developed. Testing was planned to begin in 2013.

Assembly of the fuselage of the first prototype aircraft was completed in July 2014. Completion of aircraft assembly was planned for the end of 2014. Ground tests of the aircraft began in November 2014. Russian-made components were used in the assembly of aircraft #001. Aircraft #001 was rolled out of the workshop on April 16, 2015. Assembly of aircraft #002 began in November 2014 and its fuselage had already been manufactured as of April 22, 2015.

The first flight of the An-178 aircraft No. 001 was performed on May 7, 2015 at the Antonov State Enterprise Gostomel airfield. The flight lasting 1 hour was performed by the Antonov State Enterprise test crew consisting of: test pilot 1st class Andrey Spasibo – crew commander, test pilot 1st class Hero of Ukraine Sergey Troshin – co-pilot, lead test engineer Nikolay Sidorenko (source).

The first flying An-178 in Ukrainian Air Force livery, aircraft number 197 UR-EXP, June 5, 2015 (photo - Vasily Koba, http://spotters.net.ua).

Author: DIMMI Created: 10.05.2015 00:48:59 Comments: 27 READ THE FULL ARTICLE

MiG-21. Chronology and export.

DATA AS OF 2015 (standard replenishment)
MiG-21 - FISHBED. Chronology and export.

The article contains information on the chronology of the MiG-21 in production and in the USSR Air Force, as well as data on the export of MiG-21 aircraft.

In total, the following MiG-21s of various modifications were produced in the USSR over all years:
- Znamya Truda plant (Moscow) - 3,203 units.
- Sokol aircraft plant in Gorky - 5,278 units.
- Tbilisi aircraft plant - 1,677 units.

TOTAL: 10,158 units (in the USSR).

MiG-21F-13 of the Vietnamese Air Force (http://militaryphotos.net).

Author: DIMMI Created: 19.04.2015 10:49:12 Comments: 17 READ THE FULL ARTICLE

1 2 3 **4** 5 6 ... 12 13 14